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SPECIFICATION FOR SOUP STOCK MEDIUM (BEEF)

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 3 *March* 1987

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(*Continued on page* 11)

AMENDMENT NO. 1 MARCH 2004
TO
IS 11771 : 1986 SPECIFICATION FOR SOUP STOCK MEDIUM (BEEF)

(*Page* 4, *clause* **2.1.1**) — Insert the following clause after **2.1.1**:

'**2.1.2** Quality of water used for processing shall conform to IS 4251 : 1967‡.'

(*Page* 4, *footnotes*) — Insert the following footnote at the end:

'‡Quality tolerances for water for processed food industry.'

(FAD 18)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 APRIL 2011
TO
IS 11771 : 1986 SPECIFICATION FOR SOUP STOCK MEDIUM (BEEF)

[*Page* 6, *clause* **3.2**(d)] — Substitute 'Net quantity of the contents of the container,' *for* 'Net contents of the container,'.

[*Page* 6, *clause* **3.2**(g)] — Insert the following at the end:

'h) Any other marking required under the *Standards of Weights and Measures (Packaged Commodities) Rules*, 1977.'

(FAD 18)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR SOUP STOCK MEDIUM (BEEF)

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 16 July 1986, after the draft finalized by the Meat Industry Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Soup stock medium (beef) is a by-product in the manufacturing process of canned beef. It finds extensive use in preparing soups. It is also referred to as SSM or Bone Stock and is a concentrated preparation resulting from the evaporation, under vacuum, of aqueous extract produced by cooking carcass bones and head bones of cattle, including freshly slaughtered buffalo.

0.3 In the preparation of this standard, due consideration has been given to the provisions of *Prevention of Food Adulteration Act* (*PFA*) 1954, and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under these, wherever applicable.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS:2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the methods of sampling and test for soup stock medium (beef).

2. REQUIREMENTS

2.1 Hygienic Requirements — The material shall be prepared and handled under strict hygienic conditions by persons free from contagious and infectious diseases; and only in premises maintained in a thoroughly clean

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*Rules for rounding off numerical values (*revised*).

and hygienic conditions, having adequate and safe water supply, and duly approved and licensed and monitored by the public health authorities concerned. All workers shall use clean, white and washed clothings (*see* IS:2491-1972*). Necessary precautions shall be taken to prevent incidental contaminations of the product from soiled equipment, or from personnel suffering from injuries.

2.1.1 All equipment coming in contact with raw materials or products in the course of manufacture shall be kept clean. An ample supply of water, hose, brushes and other equipment necessary for cleaning machinery and equipment shall be available. The equipment shall be sterilized by immersion in, or by swabbing with hypochlorite or other suitable chlorine solution having 200 ppm available chlorine.

2.2 Ingredients

2.2.1 *Broth* — Broth made from wholesome beef bones, derived from carcass and heads, free from objectionable odours and flavours shall only be used in manufacturing this product.

2.2.2 *Salt* — Salt used shall conform to IS:253-1970†.

2.3 Preparation — The product is prepared by clarifying with sodium chloride and concentrating the bone stock, to the specified limits, after it has been manually freed from excess fat.

2.4 Freedom from Artificial Colouring Matter — The material shall be free from artificial colouring matter.

2.5 Requirements for Finished Product

2.5.1 *Physical* — The material shall comply with the requirements specified in **2.5.1.1** to **2.5.1.3**.

2.5.1.1 The texture of the product shall be stringy.

2.5.1.2 The consistency of the product shall be firm.

2.5.1.3 A 3-percent solution of the product in boiling water, when examined hot, shall:

a) be pale yellow to brown,
b) have no abnormal odour,
c) have a bland taste free from off-flavours,
d) contain very little or no pan scale,
e) have no visible surface fat, and
f) be opalescent and not turbid.

---

*Code for hygienic conditions for food processing units (*first revision*).

†Specification for edible common salt (*second revision*).

2.5.2 *Chemical* — The material shall also comply with requirements specified in Table 1.

TABLE 1 CHEMICAL REQUIREMENTS FOR SOUP STOCK MEDIUM (BEEF)

SL No.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Total solid, percent by mass, *Min*	70·0	5 of IS : 6854-1973*
ii)	Chloride (as NaCl), percent by mass, *Max*	10·0	IS : 5960 (Part 6)-1971†
iii)	Fat, percent by mass, *Max*	1·0	IS : 5960 (Part 3)-1970‡
iv)	Nitrogen, percent by mass, *Min*	8·0	IS : 5960 (Part 1)-1970§
v)	Copper, ppm, *Max*	10·0	Appendix D of IS : 1743-1973‖
vi)	Tin, ppm, *Max*	250·0	Appendix F of IS : 1743-1973‖
vii)	Lead, ppm, *Max*	2·0	Appendix C of IS : 1743-1973‖
viii)	Zinc, ppm, *Max*	50·0	Appendix E of IS : 1743-1973‖
ix)	Arsenic, ppm, *Max*	1·0	Appendix B of IS : 1743-1973‖

*Methods of sampling and test for ingredients used in media for microbiological work.

†Methods of test for meat and meat products: Part 6 Determination of chloride.

‡Methods of test for meat and meat products: Part 3 Determination of total fat content.

§Methods of test for meat and meat products: Part 1 Determination of nitrogen content.

‖Specification for mutton and goat meat canned in brine (*first revision*).

2.5.3 *Bacteriological* — The product shall comply with the requirements specified in Table 2.

3. PACKING AND MARKING

3.1 Packing — The material shall be securely packed in wide mouthed containers with tightly fitting lids. Any further packing of these containers in protective outer wrappings shall be subject to agreement between the purchaser and the packer.

3.2 Marking — Each container shall be marked legibly to give the following information in addition to any other information required under *PFA Act* and rules:

a) Name of material,
b) Name and address of the manufacturer,
c) List of the ingredients in descending order,
d) Net contents of the container,
e) Batch or code number,
f) Licence number given by the health authorities concerned, and
g) Warranty period.

TABLE 2 BACTERIOLOGICAL REQUIREMENTS OF SOUP STOCK MEDIUM (BEEF)

(*Clause* 2.5.3)

SL NO.	CHARACTERISTIC	REQUIREMENT	METHOD OF TEST, REF TO
(1)	(2)	(3)	(4)
i)	Total plate count/g, *Max*	1 00 000	IS : 5402-1969*
ii)	*Escherichia coli*	Absent in 0·1 g	IS : 5887 (Part 1)-1976†
iii)	*Clostridium perfringens*	Absent in 0·01 g	IS : 5887 (Part 4)-1976‡
iv)	*Salmonella*	Absent in 10 g	IS : 5887 (Part 3)-1976§
v)	*Staphylococcus/g, Max*	100	IS : 5887 (Part 2)-1976‖
vi)	Sulphite reducing Clostridia/g, *Max*	100	IS : 5887 (Part 4)-1976‡
vii)	Yeast and mould count/g, *Max*	100	IS : 5403-1969¶
viii)	Equilibrated relative humidity percent, *Max*	70	Appendix A

*Method for plate count of bacteria in foodstuffs.

†Methods for detection of bacteria responsible for food poisoning: Part 1 Isolation, identification and enumeration of *Escherichia coli* (*first revision*).

‡Methods for detection of bacteria responsible for food poisoning: Part 4 Isolation and identification of *Clostridium welchii*, *Clostridium botulinum* and *Bacillus cereus* and enumeration of *Clostridium welchii* and *Bacillus cereus* (*first revision*).

§Methods for detection of bacteria responsible for food poisoning: Part 3 Isolation and identification of *Salmonella* and *Shigella* (*first revision*).

‖Methods for detection of bacteria responsible for food poisoning: Part 2 Isolation, identification and enumeration of *Staphylococcus aureus* and faecal Streptococci (*first revision*).

¶Method for yeast and mould count in foodstuffs.

3.2.1 Each container may also be marked with the ISI Certification Mark:

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4. SAMPLING

4.1 Representative samples of the material shall be drawn as follows.

4.1.1 *For Physical Analysis* — 20 g of sample shall be taken from one container of the day's production/batch.

4.1.2 *For Chemical Analysis* — 10 g of sample shall be taken from each container of the day's production/batch. If this total is less than 50 g, then a proportionately larger sample shall be taken from each container, to total a minimum of 50 g.

4.1.3 *For Bacteriological Analysis* — 10 g shall be taken aseptically from each container of the day's production/batch.

5. TESTS

5.1 Tests shall be conducted as specified in col 4 of Tables 1 and 2 respectively.

5.2 Quality of Reagents — Unless specified otherwise, pure chemicals and distilled water (*see* IS: 1070-1977*) shall be employed in the tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the test results.

---

*Specification for water for general laboratory use (*second revision*).

APPENDIX A

[*Table* 2, *Item* (viii)]

METHOD FOR DETERMINATION OF EQUILIBRATED RELATIVE HUMIDITY

A-0. PRINCIPLE

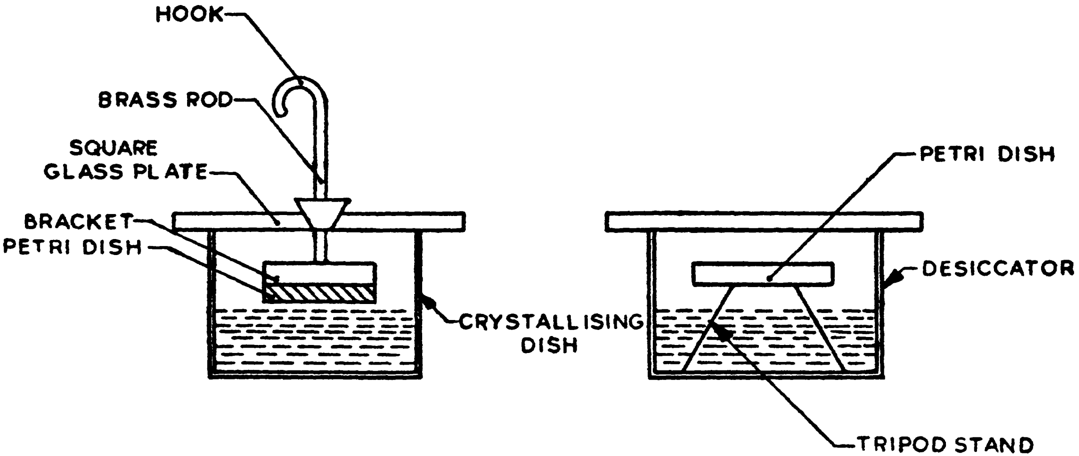
A-0.1 The procedure involves sample of the product under test to be brought to actual mass equilibrium when exposed to different relative humidities (*see* Table 3).

A-1. APPARATUS

A-1.1 The apparatus consists of a crystallizing dish (12·5 × 6·5 cm) as the main body of the test unit. Grind the top edge of the dish on a flat glass unit plate smeared with carborundum paste to remove irregularities. Apply silicone grease to the ground edge to effect a good seal between the dish and the glass plate. Place the saturated salt solution in the crystallizing dish in which the sample, held in a petri dish is kept (*see* Fig. 1A). The petri dish (9·3 × 1·8 cm) is normally supported by a bracket made from 0·6 cm aluminium sheet. The bracket should be 8·1 cm long and 1·25 cm wide and bent to fit the dish snugly. Fasten this bracket to the threaded end of 0·32 cm diameter brass rod by means of two 2-56 brass nuts. The overall length of the rod, 8·1 cm, is arbitrary and depends on the depth of the test unit and the height of the platform upon which the unit rests when placed in the balance. Bend the top end of the rod into a flat hook for convenient suspension from the pan hook of a balance or from the counterpoise used with a magnetic damping device. Drill a brass cone slip on to the rod and solder in place with the small end down and at a distance of 2·5 cm from the bottom end of the rod. Cut this cone from a 0·6 cm brass rod. The lower half of the cone should have an angle of approximately 30°.

A-1.1.1 Cover the top of the crystallizing dish with a square glass plate (13·75 × 13·75 cm) and cut a hole 0·47 cm in diameter which should be 0·6 cm off centre of a line perpendicular to one edge of the plate and passing through its centre. This off-centering is necessary because of the limitations in the space in analytical balance. There should be no chipping in the glass plate where the hole is drilled.

NOTE — In place of the above arrangement small desiccators as shown in Fig. 1B may also be used. Petri dish may be supported either on glass tripod or porcelain plate. This arrangement, however, has the disadvantage that during the interval of weighing, the sample atmosphere is changed and requires slightly larger quantity of salt solution.



1A Petri Dish Supported By a Bracket

1B Petri Dish Supported On a Tripod

FIG. 1 AN ASSEMBLY FOR ERH DETERMINATION

A-2. REAGENTS

A-2.1 Strontium Chloride — saturated solution.

A-2.2 Sodium Chloride — saturated solution.

A-2.3 Ammonium Sulphate — saturated solution.

A-2.4 Sodium Acetate — saturated solution.

A-3. PROCEDURE

A-3.1 Weigh accurately (up to 4th decimal place) 3 samples each of about 5 g and spread evenly over 16 to 20 cm area in the petri dish.

A-3.2 Place them in desiccators equilibrated previously to the temperature required for the respective RH and incubate overnight (*see* Table 3).

A-3.3 If sample upon reweighing shows gain in mass in all the petri dishes, ERH is below 70 percent and the product is acceptable.

A-3.4 For accurate ERH, plot a graph gain/loss in mass or percent of this against known ERH, the straight line intersecting on 'X' axis is the ERH of the sample.

TABLE 3 EQUILIBRIUM RELATIVE HUMIDITIES FOR SATURATED SALT SOLUTIONS

(*Clauses* A-0.1 *and* A-3.2)

SL No.	CHEMICAL	RELATIVE HUMIDITY, PERCENT AT		
		22·8°C	30°C	37·8°C
(1)	(2)	(3)	(4)	(5)
i)	Ammonium sulphate	80·1	79·6	79·1
ii)	Sodium chloride	75·5	75·2	75·1
iii)	Sodium acetate	74·8	71·4	67·7
iv)	Strontium chloride	70·0	—	—

(*Continued from page* 2)

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Base Units

Quantity	*Unit*	*Symbol*
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	*Unit*	*Symbol*	*Definition*
Force	newton	N	1 N = 1 kg. m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2